

CLAIMS

1. An IC card comprising:

a semiconductor integrated circuit having an internal
5 circuit including an information processor incorporated therein,
an antenna, and
a contact point;

wherein supply of electric power and transmission and
reception of signals with an external device can be carried out
10 by either of going through the contact point or going through
the antenna, and

wherein operating conditions being associated with supply
voltage and signal level in the internal circuit in case of going
through the contact point lie within operating conditions in
15 case of going through the antenna.

2. The IC card according to claim 1, wherein the
semiconductor integrated circuit includes

a voltage conversion means for converting a supply voltage
fed through the contact point, and

20 a level conversion means for converting a level of a signal
at the contact point into a level of a signal in the internal
circuit.

3. The IC card according to claim 2, wherein the internal
circuit includes a voltage limiter for limiting the supply
25 voltage, and an output voltage of the voltage conversion means

is lower than a limit voltage set in the voltage limiter.

4. The IC card according to claim 2 or claim 3, wherein the voltage conversion means is constituted by a voltage conversion circuit which converts the supply voltage at the contact point into a low voltage and supplies the low voltage to the internal circuit, and the level conversion means is constituted by a level conversion circuit which converts the level of the signal at the contact point into a low level and supplies the low-level signal to the internal circuit and which converts the level of the signal provided from the internal circuit into a high level and sends the high-level signal to the contact point.

5. The IC card according to claim 3, wherein the internal circuit comprises a rectifier connected to the antenna, a voltage limiter connected to an output terminal of the rectifier, an RF interface which modulates and demodulates signals passing through the antenna, a selector which selects either a signal going through the RF interface or a signal going through the contact point, and an information processor which stores a signal received from the selector into a memory and produces a signal to be transmitted to the selector, and

wherein the IC chip is formed by integrating the internal circuit, the voltage conversion means and the level conversion means, the voltage conversion means being constituted by a voltage conversion circuit which converts the supply voltage

provided through the contact point into a low voltage and supplies the low voltage to the internal circuit, the level conversion means being constituted by a level conversion circuit which converts the level of the signal provided from the internal circuit into a high level and sends the high-level signal to the contact point.

6. An IC card comprising:

a semiconductor integrated circuit integrating an internal circuit including an information processor incorporated therein,
an antenna, and
a contact point;

wherein supply of electric power and transmission and reception of signals with an external device can be carried out by either of going through the contact point or going through the antenna, and

wherein the IC chip is provided with a voltage conversion circuit which converts a supply voltage fed through the contact point into a low voltage and supplies the low voltage to the internal circuit, and a level conversion circuit which converts a level of a signal provided from the internal circuit into a high level and supplies the high-level signal to the contact point.

7. The IC card according to claim 6, wherein the internal circuit includes a voltage limiter for limiting the supply

voltage, and an output voltage of the voltage conversion circuit is lower than a limit voltage set in the voltage limiter.

8. An IC card comprising:

a semiconductor integrated circuit having an internal
5 circuit including an information processor incorporated therein,
an antenna, and
a contact point;

wherein supply of electric power and transmission and
reception of signals with an external reader/writer can be
10 carried out by either of going through the contact point or going
through the antenna, and

wherein the semiconductor integrated circuit has a voltage
conversion circuit for converting a supply voltage supplied
through the contact point, and an output voltage of the voltage
15 conversion circuit is lower than a withstand voltage of the
internal circuit which is determined by withstand voltages of
circuit components of the internal circuit.

9. The IC card according to claim 8, wherein the
semiconductor integrated circuit further includes a level
20 conversion circuit which converts a level of a signal at the
contact point into a low level and supplies the low-level signal
to the internal circuit and converts a level of a signal provided
from the internal circuit into a high level and supplies the
high-level signal to the contact point.

25 10. An IC card comprising:

a semiconductor integrated circuit having an internal circuit including an information processor incorporated therein, an antenna, and a contact point;

5 wherein supply of electric power and transmission and reception of signals with an external reader/writer can be carried out by either of going through the contact point or going through the antenna, and

wherein the internal circuit has a voltage limiter which
10 limits a supply voltage used to a withstand voltage of the internal circuit which is determined by withstand voltages of circuit components of the internal circuit.

11. The IC card according to claim 10, wherein the semiconductor integrated circuit includes a voltage conversion
15 circuit for converting a supply voltage supplied through the contact point, and an output voltage of the voltage conversion circuit is lower than a limit voltage set in the voltage limiter.

12. The IC card according to claim 11, wherein the semiconductor integrated circuit includes a level conversion
20 circuit which converts a level of a signal at the contact point into a low level and supplies the low-level signal to the internal circuit and converts a level of a signal provided from the internal circuit into a high level and sends the high-level signal to the contact point.